

Remarks/Arguments

As of the Office Action mailed March 7, 2006 claims 1-7 and 9-12 are pending in the application. Claims 1- 5 have been withdrawn and claims 6-7 and 9-12 are currently under examination and stand rejected. Reexamination and reconsideration are respectfully requested in light of the amendments and remarks/arguments herein.

Amendments to the Claims

Claims 6 and 11 have been amended to recite “providing an iron based metallic coating alloy wherein said alloy includes manganese, a deoxidizing element including a metal selected from the group consisting of chromium, vanadium, titanium, zirconium, hafnium, niobium, lanthanide metals and combinations thereof and an oxygen seeking nonmetal/metalloid, wherein said deoxidizing element is present between 5%-70% in said iron based metallic coating alloy.” Support for this amendment may be found, for example, in page 5, lines 3-9 and page 6, lines 16-23. Specifically, these sections of the specification recite that the fraction of deoxidizing elements is between 5 and 70 percent and all increments therebetween. No new matter is believed to be entered by this amendment.

New dependent claims 13-16 specify that the amount of manganese that may be present is either 2.3% or 0.8%, Support can be found at page 6, line 16 – page 7, line 2 which recite such amounts of manganese. No new matter has been entered.

Rejections Under 35 USC §112

Claims 6-7 and 9-12 stand rejected under 35 USC 112, first paragraph as the Examiner believes that the subject matter recited in claims 6 and 11, i.e., the deoxidizing metal is present

between 20-70% in the iron based metallic coating alloy, lacks support in the specification. Accordingly, the amendments above should render the Examiner's rejection moot.

Rejections Under 35 USC §103

Claims 6-7 and 9-12 stand rejected under 35 USC §103 as being unpatentable over Branagan et al U.S. 6,258,185 and separately as being unpatentable in view of Kammer et al U.S. 4,348,433.

As an initial note, Applicant has amended claims 6 and 11 to recite that the iron based metallic coating alloy includes manganese, a deoxidizing element including a metal selected from the group consisting of chromium, vanadium, titanium, zirconium, hafnium, niobium, lanthanide metals and combinations thereof and an oxygen seeking nonmetal/metalloid, wherein said deoxidizing element is present between 5%-70%.

The use of manganese in iron based metallic coating alloys is not mentioned in either Branagan 6,258,185 or Kammer 4,348,433. For example, Branagan discloses in the "Background of the Invention" that "[t]he composition of steel varies depending on the application of the alloy...In addition to iron, steel alloys can incorporate, for example, manganese, nickel, chromium, molybdenum, and/or vanadium." Col. 1, lines 20-35.

However, when disclosing exemplary alloys for forming steel materials having nanocrystalline scale composite microstructures and relied upon by the Examiner for the proposition that Branagan inherently achieves the same ASTM C633 bond strength recited in the claims, Branagan states that "[a]n exemplary alloys comprises at least 50% Fe, at least one element selected from the group consisting of Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Al, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb and Lu; and at least one element selected from the

group consisting of B, C, N, O, P and S.” As can be appreciated, manganese is not present in this list, nor is it present in any of the alloys described in Branagan. See the table on page 9 of Amendment B and RCE dated December 12, 2005 in the present application.

Accordingly, Manganese was not contemplated by Branagan for forming an iron based metallic alloy as disclosed in the ‘185 patent. In fact it was completely left out of the general and exemplary descriptions of the alloy compositions used to form an iron based metallic coating alloy. Therefore, Branagan lacks a teaching or suggestion to use manganese in iron based metallic coating alloys and is no longer believed proper to rely upon Branagan as inherently achieving the recited characteristics of the metallic coating recited in the pending claims.

Kammer also completely fails to mention the use of manganese. Accordingly, Applicant respectfully asserts that as these references do not teach or suggest the use of manganese in an iron based metallic coating alloy in the methods of claims 6 and 11.

With respect to dependent claim 7, Applicant notes that the claim recites the step of melting the alloy of claim 6 and forming a liquid state with no precipitates of the deoxidizing element in such liquid state. The Examiner indicated that Branagan did not teach the presence of precipitates in the molten coating alloy, and therefore, it appears that the Examiner concluded that since Branagan was silent on the issue of precipitate formation, it was reasonable to conclude that Branagan disclosed molten alloys that did not have any precipitates, based upon Branagan’s “broadest interpretation.”

Applicant respectfully submits that the issue is whether or not Branagan teaches or suggests to one skilled in the art that a molten alloy is one that does not contain precipitates, and on that note, Branagan is silent. Without more, Applicant respectfully submits that dependent

claim 7 defines patentable subject matter over Branagan. Alternatively, if the Examiner believes that Branagan teaches and suggests a molten alloy that does not have precipitates, Applicant respectfully requests that the Examiner point out where such teaching may be found in the subject reference.

In light of the above, Applicant respectfully submits that claim 6-7 and 9-12 are not taught or suggested by the cited references. In consideration of the foregoing Applicant respectfully requests that the rejections of claims 6-7 and 9-12 are withdrawn upon reconsideration. In addition, it is believed that new dependent claims 13-16 are allowable for similar reasons.

Having overcome all of the outstanding rejections, it is respectfully submitted that the application is now in condition for allowance. Early and favorable action is respectfully solicited.

In the event that there are any fee deficiencies, or additional fees are payable, please charge, or credit any overpayment to, our Deposit Account No. 50-2121.

Respectfully submitted,

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